ART. 14. OBSERVATIONS ON MAMMALS ALONG THE EAST COAST OF HUDSON BAY AND THE INTERIOR OF UNGAVA

By J. Kenneth Doutt

Introduction

Clearwater Explorations, Ltd. was organized for the purpose of making geological and biological studies in Ungava. Robert D. Cowen of Cleveland, Ohio, and J. V. Rawson of Plainfield, New Jersey, were responsible for planning and organizing the expedition to Clearwater Lake. Other members of the party were A. T. Wood, Dr. Ray Lawson, George H. Carpenter, William H. Cowen, J. V. (Skip) Rawson, Jr., J. A. Harquail, Bob LaVert, Ted Hunter, Rayburn Reid, Cas X. Gubernat and Dr. J. Kenneth Doutt. Without the generous support of Mr. Cowen and Mr. Rawson, the expedition could, of course, never have been undertaken.

I am deeply indebted to Mr. Cowen and Mr. Rawson for the opportunity of visiting Clearwater Lake and Seal Lake during the summer of 1953, and for my participation in one of the most pleasant and most completely equipped expeditions it has ever been my good fortune to join. To the other members of the party, also, I wish to express my appreciation for their most enjoyable companionship.

The first contingent of the party assembled at St. Jovite, Quebec, on July 15, 1953. Two aircraft, a Norseman and a Super Cub, belonging to R. D. Cowen, were loaded there and flown to Clearwater Lake, with stops at Senneterre, Rupert House, Fort George and Great Whale River. We arrived at Clearwater Lake on the afternoon of July 21. A few days later a Canso, or PBY, which flew directly from St. Jovite to Clearwater Lake, brought additional members of the party, as well as supplies and equipment.

Clearwater Lake is one of the large inland lakes of Ungava. The lake lies between 55°50′ and 56°20′ North latitude and 73°55′ and 74°50′ West longitude, and at an elevation of about 790 feet above sea-level.

A base camp was made on the northeast shore of the lake at about 56°08′ N. and 74°12′ W. Here the expedition was divided into four major parties, although there was some overlapping of personnel. Bob Cowen, Bill Cowen, Ray Lawson and George Carpenter, for instance, flew with Rae Reid to Great Whale River to study and photograph Indians and Eskimos, and to make a record of the first native voting. Again, a group consisting of J. V. Rawson, Skip Rawson, Alex Wood, Ray Lawson and two Indian guides, Walter Pachanos and Joseph Shashamish, explored the headwaters of the Leaf River; Ted Hunter and I, with two Indian guides, Thomas George and John Mukash, went to Seal Lake to study the freshwater seal, *Phoca vitulina mellonae*. Jim Harquail, Cas Gubernat and Bob LaVert remained at the base camp, from which, by aircraft, Harquail was able to visit all field parties periodically.

Just as our party was ready to leave for Seal Lake, an expedition from the American Museum of Natural History, in search of the barren-ground grizzly bear, visited us. T. Donald Carter, of the American Museum, and Oshin Agathon, a New York business man, with Tom Watt as pilot and

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Eric Clifford as guide, landed at our camp on Clearwater Lake, then joined us for a few days in our study of the seals in Seal Lake.

Our first camp on Seal Lake was made on August 4, at a rapids where the two main parts of Lower Seal Lake are joined by a narrow channel at approximately 56°31′30″ N. and 73°48′ W. On August 15 we moved camp a few miles northeast, to a deep bay at the end of a long neck of land, 56°34′ N. 73°35′ W. Here we remained until August 21, when we returned to the base camp at Clearwater Lake.

We left Clearwater Lake on August 23, about 10:00 A.M., and arrived at South Porcupine, Ontario, about 7:30 P.M. During the trip our only stops were at Fort George and Rupert House, where we paused long enough to refuel.

Lower Seal Lake is about sixty to eighty miles long and almost as wide. It lies at an elevation of approximately 860 feet. Numerous islands and long peninsulas break it into many long, narrow arms and bays. Upper Seal Lake lies about twenty to thirty miles to the south and is connected to Lower Seal Lake by a series of small lakes and rivers. To the Indians, Upper Seal Lake is known as "Menasqua ashuguanipe," which means "Seal Lake in the Woods," and Lower Seal Lake is known as "Mushawa ashuguanipe," meaning "Seal Lake in the Barrens." As is indicated by the Indian name, Lower Seal Lake is at the edge of the barrens where the trees become stunted or entirely disappear. Black spruce, white spruce and tamarack are common trees in protected ravines and valleys, but they never become very large. The largest one we saw was a tamarack 42 feet high and 11 inches in diameter, two feet above the ground. The tops of the hills and the exposed slopes are covered with lichens. Other low species, such as blueberry and crowberry, creep along the surface of the ground. In the wetter areas, which have some protection, sphagnum moss, bake-apple and Labrador tea are common species.

The land is so dotted with lakes that at times one gets the impression that there is more water than land. Low, rounded hills, with an occasional vertical cliff, rise a few hundred feet above the level of the lakes, and everywhere the hills are covered with an abundance of boulders of all sizes, scattered promiscuously by the glaciers. Long, narrow eskers wind their way across country and at times make excellent pathways where, otherwise, walking would be difficult. Sometimes caribou trails follow the ridges of these natural embankments.

The temperature in the summer of 1953, seldom rose above the upper sixties or low seventies during the day, and at night often dropped to the upper thirties. Rain, fog and high winds were common; in fact, we had either high winds, rain or fog—or a combination of these—about two-thirds of the time. Weather is the factor which, more than any other one thing, determines the amount of seal hunting one can do in this country. During the 17 days we spent on Seal Lake, only three days were really good for seal hunting, and parts of three others were fair to good. For the rest of the time there was little chance of finding seals because of the cold, cloudy weather and rough water. However, we traveled about the lake, examining

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the hauling grounds and watching for places where the seals might be feeding.

Mosquitoes and black flies were both abundant. While the black flies work only the day shift, the days are eighteen to twenty hours long during July and August. The mosquitoes know no shifts, but work around the clock. Fortunately, cold, rainy weather, with high winds drives them all into hiding, and so one comes, at times, to regard the miserable weather as a blessed relief. Fortunately the modern repellents are working wonders against this really great scourge of the north country.

Although the major objective of my part in the expedition, and the one which occupied most of my time, was a study of the seals, I made an effort to obtain information and to collect other specimens as time and opportunity permitted. During the 25 days in which collecting equipment was available I collected a total of 87 specimens. Representatives of the mammals which were collected are to be deposited in the Royal Ontario Museum of Zoology, at Toronto, Ontario, Canada. The information obtained is presented in this paper. A list of the plants collected will be presented in a separate publication.

The Cree Indian names presented here are my own phonetic renderings of the words the Indians gave me.

MAMMALS COLLECTED, OBSERVED OR NOTED

Sorex cinereus cinereus Kerr. Common cinereous shrew. Cree name "Chin-stu-oy Avook-shish."

Two specimens were trapped by T. Donald Carter at Camp One, Lower Seal Lake.

Ursus americanus Pallas. Black bear. Cree name "Cha-ouk."

The Indians told me that the black bear is sometimes found as far north as Richmond Gulf. Thomas George told me that he killed three on a lake at the headwaters of Little Whale River (southwest of Clearwater Lake) last winter (1952).

Ursus maritimus Phipps. Polar bear. Cree name "Wab-sque" or "Wab-sk."

A female and cub were obtained by Mr. Cowen at Great Whale River, August 9, 1953. Although Carnegie Museum has specimens taken farther south, from the Twin Islands and Walter Island, as recently as 1935 and 1938, the natives reported to Mr. Cowen that it was the first time in the memory of any living residents at Great Whale River Post that polar bears have been known to come ashore there. This unusual occurrence might, in part, be attributed to the fact that the pack ice remained in this section of the bay until almost the middle of August in 1953.

Ursus sp. Grizzly bear.

I have nothing but hearsay evidence for listing this species. However, stories about a bear, which is neither a black bear nor a polar bear, are so current in this region that they deserve more than casual attention. The descriptions are accurate enough to suggest a grizzly bear. In one case, my informant had seen the skin of a strange bear, but he had seen it many

years ago. This past summer, Oshin Agathon and T. Donald Carter of the American Museum of Natural History, New York, conducted an expedition into this region looking for this bear. Unfortunately, they found nothing either to substantiate or discredit the reports.

Martes americana brumalis (Bangs) Marten. Cree name "Wab-stan."

Although I saw no specimens of marten this year, the Indians told me that they had taken it on Upper Seal Lake. I understood them to imply that this was its northern limit.

Mustela erminea richardsonii Bonaparte. Short-tailed weasel. Cree name "Shuk-sch."

A small carnivore living among the broken rock piles ate mice which were caught in my traps. It was not seen, but I suspect that it was this species. The Indians knew it well. However, it may have been the following species which did the damage.

Mustela rixosa rixosa (Bangs). Least weasel.

No specimens of *rixosa* were taken this summer, but I have collected specimens of it at Great Whale River, and Kogaluk River (approximately 59°54′ N., and 76°40′ W.

The two specimens from Kogaluk River are somewhat larger than the two specimens from Great Whale River and another specimen from an island south of Comb Hills, James Bay. However, they are well within the limits of size which Hall (1951) gives for *Mustela rixosa rixosa* from Saskatchewan.

Hall points out that the eight specimens he had from eastern Canada show differences which might justify the naming of a separate race, but these two specimens from Kogaluk River seem to complicate the picture rather than simplify it. Furthermore, I have a specimen of *Mustela rixosa allegheniensis* from Pittsburgh which virtually duplicates all of the measurements of the male from Kogaluk River! The brown spots on the breast, which Hall considers, are no help, for the female from Kogaluk River has a series of small ones on her breast, but the male has none. Of the two females from Great Whale River one has a large brown spot, the other has a small spot in the center of the abdomen. The female from south of Comb Hills has no spots. Until a greater series of specimens can be assembled, which will show the characters more clearly, it seems best to refer these specimens to the subspecies *rixosa*.

Gulo luscus luscus (Linnaeus). Wolverine. Cree name "Que-quad-jou."

Although the animal was well known to the Indians, they had not seen any in recent years.

Lutra canadensis chimo Anderson. Ungava land otter. Cree name "Ne-jook."

In the northwest arm of Seal Lake we found three otters playing, not more than 200 yards from the spot where I killed one in 1938. One of these was collected for a specimen. I have collected specimens on other expeditions, as far north as the headwaters of the Povungnituk River.

Mephitis mephitis mephitis (Schreber). Striped skunk. Cree name "She-kak."

When shown a picture of this animal the Indians recognized it at once. They said it did not occur in this region. The farthest north they knew of it occurring was Rupert House in southern James Bay.

Vulpes fulva bangsi Merriam. Labrador red fox.

Although none of our party saw a fox this summer, the animal must have been abundant, because the sandy beaches, wherever we went, were covered with fox tracks. I found three fresh burrows in the sandy bank of Long Point; at another place I found the remains of a *Clethrionomys* which a fox had killed and partly eaten, and we found tracks where foxes had been stalking geese. Unfortunately, we had no fox traps with us.

Alopex lagopus ungava (Merriam). Ungava Arctic fox. Cree name "Waba-kashu."

The Indians said that this species occurs in the vicinity of Seal Lake too, but we saw none this summer.

Canis lupus labradorius Goldman. Labrador wolf. Cree name "Me-hee-kan."

The Indians knew the wolf, but said they seldom see one. They said its principal food is caribou.

Lynx canadensis canadensis Kerr. Canada lynx. Cree name "Bi-shu" or "Pe-shu."

The Indians indicated that it occurs in the vicinity of Ft. George, but not at Seal Lake.

Phoca vitulina mellonae Doutt. Ungava freshwater seal. Cree name "At-chook" or "At-chuk."

Although landlocked seals have been known for many years from Europe and Asia, until recently none had ever been described from North America. When I first visited Hudson Bay in 1935 I made specific inquiry about landlocked seals which had been reported from Lake Minto. I was told, by the Eskimo Kooke, that seals did not occur in Lake Minto, but that there were landlocked seals in Seal Lake. It was impossible to go to Seal Lake that year, but I determined to return at a later date to investigate the report. Consequently I planned, as one of the major objectives of the 1938 Carnegie Museum Expedition to Hudson Bay, to visit Seal Lake. At Great Whale River a party of Cree Indians was engaged to help transport the equipment and supplies, and during February and March we walked into Seal Lake on snow-shoes. (See Doutt, 1942, p. 61-125.) On this expedition I learned that the lakes of Ungava freeze to a depth of several feet. During the trip we frequently had to cut down through three feet or more of ice to reach the water of the lake. It is obvious that the seals living in any of these lakes have to congregate at places where rapids or low falls keep the water from freezing, for unlike *Phoca hispida,* (the ringed seal), which is the common species along the east coast of Hudson Bay, these seals do not keep a series of breathing holes open through the ice. Thus they are dependent upon open water for air. During the summer the seals crawl out on shore only on bright, sunny days, to sleep and sun themselves; but when the weather is cloudy or a cold wind is blowing, they remain in the water.

Although seals may be found anywhere in Seal Lake, during the summer there are certain places where they are most likely to occur. Swift water, or a low rapid, is usually a good spot to look for seals, because they go to such places to feed. Little bays, which are protected from the wind, are ideal, for it is in such places that they most commonly climb out on shore to sleep or sun themselves. The water in these bays is often quite shallow. One, which we examined on August 13, is typical of many. We left our canoes on the shore of the main part of the lake. There was nothing to indicate the presence of such a bay, but Thomas George knew the place and led the way across a narrow neck of land, perhaps 200 yards wide. As we neared the water on the other side he indicated that we should be very quiet. A seal's eyesight is keen, its sense of smell acute, and when it is out of the water it is very cautious; thus, when looking for seals on shore one must approach their hauling grounds with great care. From the top of the ridge, which was perhaps twenty feet above the water, we examined the opposite shore. Finding nothing, we went closer so that we could see the shore line nearest us, then proceeded up into the head of the bay. At one spot the water was very shallow and we were able to cross on stepping stones. Here we found the long, narrow trail which a seal had made as it inched itself along over the mud. As we went into the farther part of the bay, the water became deep again. All along the shore of this bay we found places where the seals had crawled out. On the rocks there was only slight evidence of wear, where the lichens had been rubbed away. On the grassy spots, of course, the evidence of the seal beds was very clear. The grass and sedges had been padded down from the weight of the heavy bodies. In this one small bay (it was not more than 300 yards long and 50 yards wide), we found at least a half dozen old beds; some looked as if they had been used not more than three or four days before. We examined eight or ten such bays during our hunting on the lake.

On the other hand, we found places where the rocks dipped steeply into the water. Along this type of shore the seals also haul out to sleep, on low, rocky ledges. One such place which we examined on August 9 was typical. On this occasion, Thomas George and I went alone. We took the outboard motor to facilitate our return to camp, but on the way out we used only the paddles. About three or four miles east of camp a long, narrow, sandy point extended eastward into the lake for two miles or more. Thomas knew a portage point across it and we headed for that. The seals evidently knew and used this same portage, for when we got there we could see tracks in the sand where a seal had crawled across. It was only about ten feet from one shore to the other, and only a foot or two above water level. Thus, it was an easy passage from one part of the lake to the other, and saved several miles of paddling—or swimming—as the case might be. With binoculars and telescope we searched the rocky shore on the opposite side of the bay, but seeing no seals we paddled on, following the contour of the shore. As we rounded each point we stopped to examine the shore ahead for seals. In about a mile we came to another portage. This was even shorter than the last. It was not more than four to six feet wide and only a foot or less

above the water—just a narrow groove in the solid rock. We slid our canoe through it, then climbed a low hill to examine the bay ahead. Thomas showed me where he had killed a seal a few years ago, and told me about a place where Jacob Rupert and another Indian had killed nine seals at one time. The bay here was surrounded by rocky hills which dipped steeply into the water. Rocky ledges, projecting slightly above the water level, made ideal places for seals to sun themselves. The hills offered protection from the wind, but that day the sun did not shine and we found no seals. In another mile or so we came out into a wide part of the lake. Here the wind had a clear sweep and was blowing up small white-caps, so we knew there was no use looking for seals on the rocks. We continued on northwestward, however, to a place where the lake narrowed down to a river, and a strong current flowed to the southeast. We spent some time on a small island, hoping to find seals feeding in the rapids. The seals live on fish and will take only live ones, the Indians say, so there was no point in trying to bait them with dead fish. We had three seal nets with us. Two were made like a purse. If the seal swam into it, the net would pull shut and the seal would be in a bag. The other net was similar to a gill net for fish, but made of much heavier twine. In this net the seal supposedly becomes entangled and so wrapped up that it can not get out.

On days when the weather was not very good for seal hunting, we would paddle along the lee shore to a small bay where, because of the protection afforded by the surrounding ridges, the water was relatively calm. On a projecting point at the mouth of the bay we would go ashore, haul up our canoe and build a fire. Our trip to Kouk Island on August 17 was typical of this type of hunting. Although the weather was not good, there was a chance it might improve, so the two Indians (Thomas George and John Mukash) and I packed lunches and left camp about 7:00 A.M. We paddled northeast along the lee shore for several miles. About 10:00 A.M. we came to a point of land on the south side of a long, narrow bay. The bay was well protected from the wind, and the water was calm enough to see the head if a seal came to the surface to breathe. We went ashore and hauled our canoe up on the beach. John built a big fire and after it was well started he proceeded to throw green branches on it. He explained that the smoke would drift out across the lake and if a seal smelled it, it would come over to see what was causing the smoke. He also threw large stones into the water, in order to make a big splash. He said this, too, worked on the seals' curiosity and would bring them into the bay where we could see them. As the morning wore on, the wind increased and rain began to fall. We piled our food, camera bags and other equipment under a large rock; John cut off some of the lower branches of a dense spruce tree which was growing close to the fire, so that we could crawl back under the tree and avoid some of the rain. One of us kept watch for seals in the calm waters close to shore, while the other two dried out by the fire. We had our lunch, but as the day wore on, the weather got worse. I had visions of being weather-bound for a day or so, and without food or camping equipment the prospects were not inviting. All the smoke and rocks failed to entice any seals, so about 3:00 P.M. we decided to start back for camp. Except for some very rough

weather, our trip was uneventful until we got into the bay where our camp was located. About half way down the bay Thomas had a glimpse of a seal's head as it appeared for a moment above the water. In a few minutes the seal appeared again, but only for an instant, and was gone before we could shoot. We waited and hunted back and forth along the beach for an hour or more, but never saw it again. It seemed ironical that we should go so far from camp, through the bad weather, and then have a seal come almost into camp.

The next fine day we went to the northeast end of the lake, to the region where we killed our seals in 1938. Tom and I went up to a little falls, while John watched for seals at the fast water. Although it was a perfect day and we traveled about thirty miles, most of it paddling quietly along shore, we saw no seals.

We spent 17 days on Seal Lake. Of this time, only three days were really good for hunting seals; parts of several other days were fair, but most of the days were cold, cloudy, windy and often rainy. In all of this time, we saw seals on only four or five occasions, and it is possible that only one or two individuals were involved. It would seem that seals in Seal Lake were not very abundant this summer. There may be some fluctuation in the population from year to year or, perhaps, over longer periods of time.

Odobenus rosmarus (Linnaeus). Atlantic walrus. Cree name "We-bu-jo" or "We-bet-cheu."

Although the Indians know the walrus they seldom—almost never—hunt it. This is principally because the walrus does not come close to the mainland. While the Indians are expert canoemen, they seldom venture far out into Hudson Bay. The Eskimos, particularly at Port Harrison and Povungnituk, however, have Peterhead boats and annually organize walrus hunts to the off-shore islands. To the Eskimo, the walrus is a valuable source of dog food. The tusks furnish ivory, which is also important to them, for it is used in the construction of many of their implements, such as seal spears and kayak paddles. Handles for many objects, such as knives and dog whips, as well as dress ornaments, combs, trinkets and many carvings, are also made of ivory. The importance of the ivory to the Eskimo may be indicated by the fact that the word "Ivik," which is their word for ivory, is the same as their word for walrus.

Tamiasciurus hudsonicus ungavensis Anderson. Ungava red squirrel. Cree name "Nu-goo-jash."

Our Indians were familiar with the red squirrel, one of which lived in the stunted black spruce trees behind our camp at Clearwater Lake. I often watched it eating seeds from the cones of the black spruce. Strangely enough, I saw no sign of this species at Lower Seal Lake.

Glaucomys sabrinus makkovikensis Sornborger. Labrador flying squirrel. Cree name "Ke-shá-lu."

I have examined specimens of the large northern flying squirrel from the vicinity of Ft. George and Rupert House, and I suspect that it ranges widely through the interior of Ungava, around the headwaters of the Ft. George, East Main and Rupert rivers. Specimens from this side of the peninsula

differ slightly from those in the Atlantic watershed. The back is buffy brown instead of rusty, the tail is lighter, and the belly is more heavily washed with buffy brown. In the specimens I have at hand, these characters seem to be relatively constant and I first considered describing them as a new subspecies. Further consideration of this problem, however, caused me to abandon this idea, at least until a more thorough study can be made of the relationships between specimens from the east and west sides of the Ungava Peninsula. The specimens I have from Ft. George were probably brought down from well back in the interior by Indian trappers. They were given to me in 1935 by William Watt, who was then Manager of the Ft. George Post of the Hudson's Bay Company. He told me that flying squirrels were relatively scarce and that he got about one of them to every 200 red squirrels. J. S. Watt, who was Manager of the Hudson's Bay Company Post at Rupert House for many years, also told me that flying squirrels were rare.

I have also examined a series of specimens from the Hamilton River drainage, which I obtained through the courtesy of T. E. Keats, who was Manager of the Hudson's Bay Company Post at Northwest River in 1939. One of these specimens was very dark, almost black. A series of *Clethrionomys* from the Hamilton River area also contained some individuals which were almost black. It may be possible that there is a tendency toward melanism in mammals in this area.

Castor canadensis labradorensis Bailey and Doutt. Labrador beaver. Cree name "Am-insk."

John Mukash killed six beaver at Clearwater Lake in the past year or so. This must be near the northern limit of this genus on the west side of the Ungava Peninsula.

Synaptomys borealis innuitus (True). Ungava lemming mouse. Cree name "Avook-shish."

The Indians did not seem to distinguish this species from the Meadow Mouse, *Microtus,* or *Phenacomys*; at least they used the same name for all three. I trapped only two specimens at Seal Lake. They were not nearly so common as *Phenacomys* or *Clethrionomys.*

Two races of *Synaptomys* have been described from Ungava—*Synaptomys borealis innuitus,* with type locality at Fort Chimo on the northern end of the Ungava Peninsula, and *Synaptomys borealis medioximus,* with type locality at L'Anse au Loup, Strait of Belle Isle on the southern margin of the peninsula. Our specimens from Seal Lake are much closer, geographically, to Fort Chimo and on this basis I have assigned them to this subspecies. I have, for comparison, one specimen without skull from Fort Chimo and one specimen from Red Bay, Labrador. Our specimens are markedly different from either and may possibly represent another race from the western side of the peninsula. Further study of this problem is indicated.

Dicrostonyx hudsonius (Pallas). Labrador lemming. Cree name "Che-ma-vook-shoo."

Although I searched for lemmings at Seal Lake I found no evidence of

their presence this year. I was familiar with them at Povungnituk and Great Whale River. Both places are more strictly arctic in nature than is Seal Lake. Our southernmost record is from Kakachischuan Point, at about 50° N. latitude. This is on the east coast of James Bay and is about fifty miles south of Cape Jones. Because of its proximity to the cold waters of Hudson Bay this place is in the arctic life zone, although the Canadian zone begins a mile or so inland.

Phenacomys ungava ungava Merriam. Ungava Phenacomys. Cree name "Avook-shish."

The Indians did not distinguish between this species of mouse and other similar kinds, such as *Microtus* and *Clethrionomys*. I trapped 20 specimens at Seal Lake and Clearwater Lake. These specimens are larger than specimens from Fort Chimo. This difference in size, and differences in color and skull characters, seem to indicate that specimens from this area may represent a new race. Further study of this problem is desirable.

Clethrionomys gapperi hudsonius Anderson. Hudsonian red-backed mouse. Cree name "Avook-shish."

This was the most abundant small mammal in the vicinity of Seal Lake in the summer of 1953. It outnumbered, by three to one, all other species I caught in my traps. That they were serving as food for the foxes was indicated by tracks on the sandy beaches and by the remains of one which a fox had left only partly eaten.

At our first camp on Lower Seal Lake, *Clethrionomys, Phenacomys* and *Synaptomys* were all taken in the same runways. They lived among the large blocks of rock, which formed excellent protection. These large rocks also formed shelter for the plants which grew near them. Such plants as twin flower, crowberry, ground-pine, ledum, blueberry, and dwarf dogwood were common. Since all three species of mice were using the same runways, it was not possible to tell which species was responsible for cutting the plants, but I found leaves of the dwarf dogwood, a berry of the crowberry, and parts of branches of the ground-pine carried into the runways. I also found large piles of droppings in some places, indicating that these mice have preferred spots for such purposes. Some of these piles contained a double handful or so of pellets and had probably accumulated under the snow during the winter. In other places the piles were still being used.

Microtus pennsylvanicus labradorius Bailey. Ungava meadow mouse. Cree name "Avook-shish."

Although considerable trapping was done at Clearwater Lake and Seal Lake this summer, no specimens of *Microtus* were taken. I was somewhat surprised to find them absent here, for in other years I had found them relatively common along the coast as far north as Povungnituk.

Ondatra zibethica aquilonia (Bangs). Labrador muskrat. Cree name "Ootshk."

Although we collected no specimens of muskrats at Clearwater Lake or Seal Lake in 1953, the species is well known to the Indians who live in this region. On former expeditions I have collected specimens at Great Whale

River and at Kikkerteluk River, latitude 58° N., longitude 77°10′ W. along the east coast of Hudson Bay.

Erethizon dorsatum picinum Bangs. Labrador porcupine. Cree name "Ko-uk."

No porcupines were collected in 1953, but the Indian name for one of the islands in Lower Seal Lake is "Kouk-one-nook." When I asked the Indians why it was so called they told me that it was because porcupines at one time inhabited the island. Thomas told me that last year, on an island just east of our second camp, he saw two trees the bark of which had been eaten off by porcupines although he did not see the animals. He also told me that James Mammiamskum, an Indian at Great Whale River, had the skull of one which he had killed near Richmond Gulf.

Lepus arcticus labradorius Miller. Hudson Bay Arctic hare. Cree name "Mis-tou-ks."

Although the Indians were familiar with the Arctic hare, we saw no sign of it at Clearwater Lake or Seal Lake. I have collected specimens of them on the Manitounik Islands just north of the mouth of Great Whale River and Carnegie Museum also has specimens from ten miles north of Great Whale River and from Richmond Gulf. Evidently Great Whale River is near their southern limit on this side of the bay.

Lepus americanus americanus Erxleben. American varying hare. Cree name "Wa-bush."

We did not see any rabbits in 1953, but at a few places around Seal Lake we saw tracks and droppings.

Rangifer caboti G. M. Allen. Ungava caribou. Cree name "A-took."

Since my first visit to the east Coast of Hudson Bay in the summer of 1935 I have been trying to assemble data on the status of the caribou. During the early part of the last century they were extremely abundant over much of Ungava. About the turn of the century, however, they suddenly vanished, and many Indians and Eskimos starved to death.

Many suggestions have been offered to explain the disappearance of the caribou, but no one knows what actually did happen to them. To my mind, the most probable cause was the rapid spread of some new disease or parasite. Whatever the cause of their decimation may have been, it is certainly true that caribou were extremely rare in Ungava during the early part of the twentieth century.

When I first visited Seal Lake, in 1938, I was looking for landlocked seals and did not have time to hunt for caribou. However, in the course of our traveling through the interior, I saw tracks of several caribou in the region between Clearwater Lake and Lower Seal Lake. James Sandy, one of our Indian guides, told me that a small band of caribou then lived in the region between Lake Minto and Lower Seal Lake during the winter, and that in the summer they traveled through the country between Lower Seal Lake and Upper Seal Lake. He said there were about thirty to forty caribou in the herd. James Sandy told me that he had killed 10 caribou between Clearwater Lake and Upper Seal Lake during the summer of 1934.

I spent the spring and summer of 1945 in the vicinity of Povungnituk, and during April and May I traveled inland by dog-sled with a party of four Eskimos. During this trip I saw several bands of twenty or more caribou and the tracks of many others. Sam Ford, who was manager of the Hudson's Bay Company Post at Povungnituk, told me that the Eskimos in that area had killed about two hundred caribou during the fall and winter of 1944-1945. From all the reports that I could gather, a similar number had been killed by the natives who lived in the vicinity of Port Harrison.

During this past summer we covered, by aircraft, more than one thousand miles, from Great Whale River to Clearwater Lake, Port Harrison and Fort George. We also did a considerable amount of flying in the area between Clearwater Lake and Seal Lake. Although we kept close watch for caribou during these flights, and frequently followed their trails for several miles, we saw none. The difficulty of locating, from aircraft, parties lost in the bush is well known. However, this country is semi-barren. The spruce and tamarack are stunted and grow only in protected places. The tops of the hills are customarily bare, except for caribou moss and other low-growing plants, so that one gets the impression that it would be very easy to see any animals that were within several miles of the line of flight. While vision is unimpeded, this confidence of being able to see objects on the ground, while flying at 500 or 1000 feet, is a delusion which leads to many false assumptions. This was well illustrated by an incident that took place the day we moved camp on Seal Lake. The Cub, which cruises at only about ninety miles per hour, landed at our old camp, and Ted Hunter told Cas Gubernat, the pilot, approximately where we had gone to set up our new camp. Cas and Jim Harquail flew directly over us at an altitude of about five hundred feet. We were, at the time, on an open tract of ground. Our canoe was on a clear, sandy beach, and when we heard the aircraft coming we ran to the top of the nearest hill and waved a piece of white canvas to attract their attention. Ten minutes or so later, when the Cub returned, we had a fire built on the beach to make a smoke. We waved the white canvas as well as our arms and hats. Although they flew almost over us again, they did not see us either time. I think this illustrates very well how easy it is to overlook an object on the ground, although from a seat in an aircraft, one is confident of being able to see every object below. With this in mind, it is easy to understand that we may have flown over caribou without seeing them.

The moment we went ashore at Seal Lake we saw fresh tracks of caribou on the sandy beach, and during the 17 days we spent at Lower Seal Lake we saw tracks of five or six more. The tracks of one were seen along the shore where we made our first camp. The Indians found very fresh tracks a day or two later, and were so sure that they could get the animal which made them that they left early the following morning, after making preparations for bringing it back to camp. However, the caribou had moved on in the meantime and they did not get it. I found the bones of several which had been killed the previous winter. Thomas George told me that two of

them were ones which he had killed. A well-worn caribou trail ran along the shore just behind our camp. Relatively fresh pellets in it indicated that it had been used by caribou that spring. When we moved to our second camp on Seal Lake we also found fresh tracks, as well as places where the caribou had been grazing on the lichens. I asked Thomas George how many caribou he had killed in his lifetime here (he was then about forty-five years old). He could not begin to tell me the number—all he could say was, "many, very many."

From all the evidence which it has been possible for me to accumulate over the past 18 years, it seems that the number of caribou is gradually increasing in this vicinity. If reasonable protection can be given to them, by preventing white men from killing them, I believe they will, in time, build up again to good-sized herds. There is an abundance of food. We saw no evidence of the destructive fires mentioned by Manning (1946, p. 82-83), which occurred at the head of Moisie River and at Lake Nichikun. Wolves are very scarce, and there are no other large carnivores which could be serious predators.

I have heard suggestions that reindeer be introduced into this area to supplement the caribou. This, I think, would be a grave error and might lead to most disastrous results for the native caribou. It is possible that the reindeer might bring into the region parasites or diseases which would be very harmful to the caribou. Furthermore, there is no assurance that the reindeer would do any better in this region than the caribou has. The experiment of introducing reindeer into Alaska, was, unhappily, not very satisfactory nor successful. The reindeer is inferior in size, and is not as desirable an animal as the native caribou. It would be much cheaper, for the present, to provide the population of Eskimos and Indians with the necessary number of caribou or reindeer skins imported from other areas, than to try to establish herds of reindeer in Ungava. This would give the native caribou a chance to re-establish itself. Summing up all the information I have, it seems to me that there is as much reason to believe that the caribou will again establish itself, if given protection for a period of time, as there is to believe that the reindeer could be established to advantage. Furthermore, the chances of doing serious damage to the native fauna of Ungava by introducing a foreign species, with its attendant retinue of diseases and parasites, is so great, and the chances of this introduction succeeding to the benefit of the native Eskimos and Indians are so slight, that no attempt of this kind should be made without a thorough study of all phases of the problem. Even then, if it is decided to try to introduce reindeer or any other foreign species, the experiment should first be tried on some island, such as Mansel, Coates or Southampton. If the experiment did not prove to be satisfactory there, the whole mainland of Ungava would not be polluted by new disease organisms and parasites.